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ABSTRACT

This document reports a study investigating the effects of father absence on measures of cognitive, social, and motivational development in infancy. The sample included 54 black infants, 27 of whom were classified "father-absent." This classification was based on two indices, (1) a dichotomy of father-absent or father-present based on mother's responses to questions, and (2) a rating scale describing amount of father-infant interaction. Sixteen measures of infant functioning were analyzed for the study. The analysis indicated that for female infants there were no relationships between father variables and infant behavioral variables. For males, the following dependent variables were significant: Bayley Mental Developmental Index scores, a cluster from the Bayley Scales measuring social responsiveness, another cluster measuring Secondary Circular Reaction, and exploratory behavior as assessed in situational tests. It is speculated that one of the father's functions in infancy may be to provide stimulation that augments the primary caregiver's by introducing a degree of novelty. No explanations for the sex differences could be formulated. It is concluded that the results are tentative, and much observational research is needed. (DP)

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FATHER ABSENCE IN INFANCY[1]

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Several studies have indicated that father absence has a significant effect on cognitive and personality development (Biller, 1970) in young children. For example, Deutsch and Brown (1954) reported significantly lower IQ scores for 1st grade black children reared in father-absent circumstances compared to their father-present peers. While father-absent families might be expected to have lower economic resources (and many studies have shown a significant correlation between IQ and indices of socio-economic level), Deutsch and Brown presented evidence for father absence having an effect on IQ that was greater than that attributable to socio-economic factors alone. Some studies have also suggested that father absence occurring early in life (before three years) is of greater consequence than father absence occurring later (Carlsmith, 1964), although outcome measures have been obtained characteristically at primary school age or later. In this investigation we examined the effects of father absence on measures of cognitive, social and motivational development in infancy

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(age 5-6 months). There are essentially no theoretical models that deal with the father in the pre-identification period. This may represent an implicit assumption that the father has no particular impact on the developing infant, but there has heretofore been no empirical check on this assumption. Evidence of any influence on development is therefore relevant to our basic theoretical assumptions regarding the early environment.

The sample consisted of 54 black infants (28 males and 26 females) recruited through two public well-baby clinics in the Washington. D. C. area as part of a larger investigation of environmental influences on development (Yarrow, Rubenstein, Pedersen and Jankowski, 1972). The educational attainment of the parents was high school or less and all families were living in the inner-city in circumstances that ranged from poverty to lower middle-class levels.* Pediatric and neurological examinations of the infant were included to eliminate any suspicion of physical damage or illness. I might add that the larger investigation was directed toward the interaction between the infant and his primary caregiver during the daytime hours. The father and his involvement with the infant was a secondary interest.

Two indices of father absence were available. One was a dichotomous classification of father-absent vs. father-present living circumstances based on the mother's response to questions concerning household members.

*The larger investigation included 16 additional subjects of middle class background. These were excluded from this analysis because one of their selection criteria was that the family was intact, and there are no father-absent comparison cases of comparable socio-economic background.

These questions were asked on several occasions by a research pediatrician and a home observer when the infant was between three and five months of age, the period when these staff members had contact with the family. The focus of the questions was on the full range of people who came in contact with the infant and, if the father was not mentioned spontaneously, direct inquiry was made. The classification was not based on marital status; father absence includes instances where the father is out of town because of military service or other employment as well as separations due to family discord and conflict. By virtue of the ongoing relationship with the research staff, there is reasonable certainty that there was accurate reporting. Eighteen of the 28 male infants and nine of the 26 females were classified father-absent. The association between sex of infant and father absence is not statistically significant.

The second measure is a somewhat more refined scale describing the father's amount of interaction with the infant, which was also obtained from the mother's report. This is a five point scale that ranges from no contact with the infant through daily interaction. Inter-rater agreement on the scale is .96 and there is a rank order correlation of .76 between the rating and the dichotomous classification, indicating that there is slightly different information in the two variables. There were a few instances where the father, though living elsewhere, was described as maintaining some degree of relationship with the baby as well as instances of fathers living in the home who had little interaction with the infant.

In this sample, there was no confounding of the father variables with socio-economic status. Indices of socioeconomic level included the mother's and father's educational attainment, estimates of family income from Census tract data, and ratings of the home and neighborhood similar to those in the Warner scale (1949). Correlations between the father variables and these SES indices were uniformly not statistically significant.

There were 16 measures of infant functioning obtained in two different sessions with different male examiners. These included the Mental and Psychomotor Developmental Indices from the Bayley Tests of Infant Development, eight clusters of items developed from the Bayley to measure social, motor and cognitive-motivational development in a more differentiated manner, four measures of exploratory behavior obtained in a standard situational test (Rubenstein, 1967), a measure of the amount of vocalization occurring during exploration, and a special set of items designed to measure rudimentary problem solving behavior. Because of time considerations, I will limit my discussion of the infant variables to those which showed a significant relationship with the father variables, and present this information in the context of the results.

Results and Discussion

We analysed the data separately by sex of infant. First, with regard to the female infants, we can report these results very rapidly:

there is simply no relationship between the father variables and any of the measures of infant functioning. There isn't even a trend that one might report with a straight face.

For the male infants, 15 out of the 16 infant measures were numerically lower in the father absent group, and three of these differences were statistically significant. Table 1 shows the means, standard deviations and the significance level of differences. The Bayley Mental Developmental Index, a cluster of Bayley items measuring social responsiveness, and a measure of preference for manipulating novel objects were significantly higher among the father-present reared male infants.

The rating, amount of interaction with infant, yielded five significant correlations, four of which are significant at the one percent level. In addition to the variables which were significant with the dichotomous breakdown , amount of father contact is also significantly related to the Bayley cluster measuring Secondary Circular Reactions and to the infant's preference to explore novel objects visually. The rating appears to have stronger relationships with functioning (in male infants) than the more global classification of father absence vs. father presence. I think the reason for this is that the rating describes more accurately the father's relationship with the infant, which is not precisely the same information as whether he is living in the same home.

At this point I want to take a moment to describe in a little greater detail the dependent variables which are significant. The

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The Bayley Mental Developmental Index needs no comment except to note that there is a 12 point advantage in the means for the father present males. The infants as a group, that is, both the father-absent and father-present subjects, are above the norm for white infants, a finding that has also been reported by others.

The cluster of items measuring Social Responsiveness has eight items including such behaviors as vocalizing to a social stimulus, anticipatory adjustment to lifting, enjoying frolic play and approaching and smiling to a mirror image. Its split half reliability is .84.

Secondary Circular Reaction is the repetition of behavior which produces interesting results. The cluster has only two items, banging in play and enjoying sound production. This is a technical limitation in the measure, but a tetrachoric correlation between the two items is .92 and the only subjects who did not get credit for these items were in the father-absent group.

The procedure for measuring exploratory behavior was developed by Judith Rubenstein. An unfamiliar toy, a small bell, was presented to the infant for 10 minutes and the amount of time spent in visual and manipulative exploration were scored with timers; this produces the measures Look at Bell and Manipulate Bell. Then the bell, now familiar to the infant, was paired with each of ten new toys for one minute intervals. (The novel toys include such items as a beaded necklace, some balloons, a change purse, a piece of colorful plastic, a comb and a small bracelet--a sampling of fascinating items for the six month older.) The observer recorded the amount of time spent in visual or manipulative

exploration of either the familiar bell or the novel toys. Other analyses have shown a high preference for the novel toys among infants reared in more stimulating environments, particularly ones with a variety of inanimate objects which the infant might explore. Preference for the novel objects is thought to represent more advanced development, reflecting either more elaborate schema with which the infant may assimilate new information or more rapid habituation to the familiar stimuli. We find that the amount of interaction with the father is correlated with the infant's visual and manipulative preference for novel stimuli.

Is there any sense to be made from this pattern of results? I think possibly so. The male infants whose fathers are described as more interactive with them appear more alert, more responsive, and more interested in eliciting stimuli from the environment. The infants are behaving as though they have received more stimulation, and we speculate this may be one of the functions of the father in infancy: a provider of some degree of stimulation that augments or complements the mother and introduces a degree of novelty compared to the daily routine with the mother. That these results occur only with male infants is peculiar and we have no satisfactory explanation. (Other analyses in the larger investigation show a preponderance of significant correlations between the behavior of female caregivers and <u>female</u> infants.)

I already mentioned that the results are not interpretable as an artifact of socioeconomic differences between the father-absent and

father-present groups. There is another interpretation that we examined: perhaps the significant relationships were actually mediated by the mother. One may reason that perhaps the mother interacts differently with the infant depending upon whether or not she has an ongoing relationship with the baby's father, particularly a man who is himself interested in the baby. This is an important point conceptually because almost all previous studies of father absence have not distinguished whether effects are due to the direct father-child relationship or whether (or in what ways) maternal behavior is affected by the presence or absence of the father. We are attempting to distinguish conceptually two different components of the father's influence, his direct interaction with the baby and the effect that he may have on the mother's interaction with the baby, and this analysis would apply across a wide range of variation in father present homes as well.

A limited test of this hypothesis of mediated effects was possible by examining the home observations that were a part of the larger investigation of environmental influences. We found, however, that for 13 of the 28 male infants the primary caregiver was someone other than the mother. Surrogate caregivers, e.g., grandmothers, other relatives or hired babysitters, were equally prevalent in the father-absent and father-present groups. There is no confounding on that basis, but we had observations of only 15 mothers (10 father-absent and five father-present). We looked at twelve measures of environmental stimulation that other analyses indicated were important for the infant's development, and one of these was found

to be statistically significant: father-present male infants were provided with a significantly greater variety of inanimate objects with which the infant may play. That is not trivial because our data indicate that inanimate stimulation is quite important early in life, but it is not strong evidence of a mediated paternal effect. The father might have provided the additional play materials as well as the mother. On measures of actual social interaction with the infants, the mothers of the father-absent and father-present males behave about the same. Except for the problem of the small size of the sample, we are left with the conjecture that direct father-infant interaction may affect the development of the male infants.

You may sense my ambivalent feelings about some of these results, and I feel the greatest dissatisfaction with the concept father absence. This is a deficit concept vaguely akin to "maternal deprivation." It tells us nothing about what fathers really do in direct interaction with infants or children, and it gives us no leverage for understanding mediated father effects. While we have presented evidence that runs counter to the usual assumption that maternal variables alone are the primary environmental determinants of infant development, it is clear that more complex conceptual models of the early development should be considered and that observational studies of paternal behavior are in order. This is exactly what we are now engaged in doing.

TABLE 1

Comparison of Male Infants Reared in
Father Absent and Father Present Environments

Infant Functioning	Father Pres. (N=10) Mean	SD	Father Abs. (N=18) Mean	SD	Mann-Whitney Sig. Level	Rank Order Correl.with Father Contact
General Status						
Bayley MDI	121	16	109	16.7	$<.05$	.47**
Bayley PDI	114	11	108	17.7	--	.20
Soc. Resp.	5.9	1.6	4.7	1.6	$<.05$	.38*
Language						
Voc. to Bell	36.2	46.2	19.4	25.2	--	--
Lang. Qual.	3.6	1.4	3.0	1.4	--	.31
Motor Develop.						
Gross	7.8	1.9	7.1	3.5	--	--
Fine	9.7	2.7	8.5	3.5	--	.28
Goal Dir. Beh.						
Goal Orient.	3.8	1.4	3.1	1.5	--	.20
Reach & Grasp.	8.0	1.5	7.3	2.8	--	.26
Sec. Circ. React.	2.0	0.0	1.7	.6	--	.61**
Cognitive Funct.						
Prob. Solv.	4.3	2.5	3.8	2.9	--	.21
Obj. Perm.	2.7	1.6	2.1	1.2	--	.22
Explor. Behav.						
Look at Bell	256	74	223	101	--	.29
Manip. Bell	283	86	288	136	--	.29
Look at Novel	251	90	200	85	--	.59**
Manip. Novel	441	132	330	166	$<.05$	.53**

* $p < .05$
** $p < .01$

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